

AUSTRALIAN SYSTEMATIC BOTANY SOCIETY

NEWSLETTER

Newsletter No. 17

December 1978

ASBS Council

- President* Professor Roger Carolin, School of Biological Sciences, University of Sydney, Sydney, NSW, 2006
- Vice-President* Mr Rod Henderson, Queensland Herbarium, Meiers Road, Indooroopilly, Queensland, 4068
(Present address: Royal Botanic Gardens, Kew, Richmond, Surrey, TW9 3AB, UK)
- Secretary* Mrs Karen Wilson, National Herbarium, Royal Botanic Gardens, Sydney, NSW, 2000
- Treasurer* Mr Mike Lazarides, Herbarium Australiense, CSIRO, Box 1600, Canberra City, ACT, 2601
- Councillors* Mr Alex George, Western Australian Herbarium, Department of Agriculture, George Street, South Perth, Western Australian, 6151
- Dr John Jessop, South Australian Herbarium, North Terrace, Adelaide, South Australia, 5000

This publication, the official newsletter of the Society, is produced four times each year and deadlines for copy are the last day of February, May, August and November.

Please send contributions, preferably typed in duplicate, to the Editor, at the address below. Items from any source and of interest to members are acceptable. Items incorporated in the newsletter will be duly acknowledged.

Please note: Next deadline is 28th February, 1979.

Subscriptions for 1979 are due 1st January.

(Members in Australia \$4.00 if paid by 31st March
\$6.00 thereafter

Overseas Members US\$8.00 or equivalent).

Editor: Mr A.S. George
Western Australian Herbarium
George Street, South Perth
WESTERN AUSTRALIA. 6151

FIFTH GENERAL MEETING

The Society's fifth General Meeting will be held during the afternoon of 19th January, 1979 in Sydney.

Time: 1.00 pm

Place: Botany Department, University of Sydney.

Karen Wilson
SECRETARY.

PROVISIONAL AGENDA FOR FIFTH GENERAL MEETING

1. Minutes of 4th General Meeting
2. President's Report
3. Treasurer's Report
4. Newsletter Editor's report
5. Report on Central Australian Flora
6. ABLO funding & library
7. NT Burbidge Memorial
8. ABRIS
9. Index of research
10. Increase of subscriptions?
11. Any other business
12. Next General Meeting
13. Incoming Council.

INAUGURAL ADDRESS

The first Nancy Burbidge Memorial Lecture will be given by Dr Selwyn Everist on 19th January, 1979 following the Society's fifth General Meeting.

TITLE: The Role of Herbaria in Australia Today.

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COUNCIL FOR 1979-80

All positions on Council have been filled unopposed. The new Council will be announced at the General Meeting.

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DINNER FOLLOWING GENERAL MEETING

People wishing to attend a dinner after the General Meeting on 19th January, 1979, must notify Karen Wilson BY 29th DECEMBER. NO LATE NOTIFICATIONS WILL BE ACCEPTED!

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ASBS OFFICE-BEARERS TO DATE: CORRECTION

Part of the list of office-bearers was omitted from the last newsletter. The remaining 4 members and the positions which they have held are as follows:

	<u>1973-5</u>	<u>1975-6</u>	<u>1976-7</u>	<u>1977-9</u>
<i>M. Lazarides</i>	-	T	T	T
<i>D.J. McGillivray</i>	S	-	-	-
<i>T. Whiffin</i>	P	P	VP	-
<i>K.L. Wilson</i>	-	S	S	S
	*	*	*	*

ABBREVIATED MINUTES OF 4th GENERAL MEETING

HELD IN MELBOURNE ON 30th AUGUST, 1978

1. The Minutes of the 3rd General Meeting were accepted.
2. The President's Report was given by Roger Carolin.
3. The Treasurer's Report was presented.
4. The Report of the newsletter Editor was presented by the President.
5. Reports from local chapters. A consensus of opinion showed that the chapters all seemed to be functioning reasonably successfully.
6. Flora of Australia. In view of recent developments, the President outlined an overall suggestion for an "undirected Flora of Australia", i.e. a continuing series of monographs which would gather together all revisions which were done on an Australia-wide basis. The meeting was generally in favour of the suggestion and Council is to forward the idea on to wherever it sees fit.
7. Australian Botanical Liaison Officer. Hj. Eichler stated that at this stage, support for the ABLO was still forthcoming from CSIRO. It was moved and carried that a copy of future issues of the ASBS Newsletter should be sent to the ABLO for permanent retention there for successive officers. It was agreed that a small library of major reference books should be established for the ABLO.
8. Central Australian Flora. J. Jessop reported that a rough sample draft had been circulated. There are volunteers for writing up c. 99% of the species; J.H. Willis will write an historical introduction on exploration; an ecological chapter is anticipated. Material is to be in hand by the end of 1979.
9. International Botanical Congress. The President said that the Society hoped to have the Central Australian Flora completed and published in time for the IBC in Sydney in 1981. Whether the

Society should play any active part in the Congress was left for decision at a later date. Possibility of a dinner was favoured.

10. Australian Customs Act Regulation 13A. This regulation applies to the export of type specimens of insects, but it does not apply to plant types as previously feared.
11. Nancy Burbidge Memorial. The question of a memorial to Nancy Burbidge was discussed at length. It was moved and carried that the ASBS Council should established a Nancy Burbidge Memorial Fund with a view to providing either a memorial lecture of series of lectures or else providing financial assistance to students working in Australian systematic botany.
12. Incoming Council. The incoming Council for 1977/79 term was announced.
13. Next General Meeting. Council is to decide on a venue.

The meeting then concluded with the Presidential Address, "The Old Systematics", delivered by Roger Carolin.

Thanks are due to Helen Aston for taking the Minutes.

Karen Wilson
SECRETARY.

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SYMPOSIUM ON THE BIOLOGY OF AUSTRALIAN NATIVE PLANTS
Perth, Western Australia
6 - 10 August, 1979

This Symposium is a Western Australian Sesquicentennial Celebration Event and is sponsored by the Botany Department of the University of Western Australia, the Western Australian Wildlife Authority, and a number of other interested organisations. It will be held at the University of Western Australia in August, 1979.

It is hoped that the Symposium will bring together as many people interested in the scientific study of our native plants as is possible, and provide a useful review of current information on a wide range of biological aspects of the flora.

Further information concerning registration fees (due by 25th March, 1979) provisional scientific and social programmes, lecture venues, tours and accommodation is obtainable by writing to the following address:

The Secretary
Biology of Australian Native Plants Symposium
c/- Department of Botany
University of Western Australia
NEDLANDS. W.A. 6009

Interested members of the community, as well as professional biologists, are invited to register.

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NEWS ITEMS

GEORGE BENTHAM COMMEMORATED IN CENTRAL LONDON

At 3.00 pm on Monday, 6th November, 1978, a rather overcast, bleak and breezy day, a small gathering of interested persons from the Royal Botanic Gardens, Kew, the British Museum (Natural History), the Linnean Society of London, the Bentham-Moxon Trust, and the Greater London Council, attended an unveiling ceremony held at the entrance to number 25 Wilton Place off Knightsbridge, south of Hyde Park, London.

Professor J.P.M. Brenan, Director of the Royal Botanic Gardens, Kew, after recalling something of the life and many notable botanical achievements of George Bentham, unveiled a plaque marking the final home of the world-renowned botanist who lived at this address for the last 20 years of his life and died there. It was in this house that Bentham did much of his writing during these years including the manuscripts of later volumes of his *Flora Australiensis*.

The circular, ceramic plaque, set in concrete to the left of the front doorway of No. 25, reads in white against a blue field as follows:

GREATER LONDON COUNCIL

GEORGE
BENTHAM

1800 - 1884
Botanist
lived here
1864 - 1884

After suitable photographs were taken, the occasion was celebrated over drinks in the Linnean Society rooms in close-by Piccadilly.

We can thank Mr George Chippendale of Canberra, who, while Australian Botanical Liaison Officer at Kew several years ago, suggested to the Greater London Council that such a plaque be put on this house. Thanks are also due to Andrew Kanis (CANE) and Bruce Maslin (PERTH), subsequent ABLs, for supporting action. It is unfortunate that George was not able to be present on this occasion, but Australia was represented by Bruce Maslin and myself.

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AUSTRALIAN FLORA ON WEDGWOOD CHINA

Members may be interested to know that an authentic 1883 Wedgwood dessert plate featuring four eastern Australian wildflowers -- Blandfordia nobilis (Christmas Bells), Lobelia gracilis, Bauera rubioides (Bauera) and Ceratopetalum gummiferum (NSW Christmas Bush) - has been donated by Miss Agnes L. Wyatt to the Victoria & Albert Museum London, for the Wedgwood collection. Miss Wyatt of Harrow, Middlesex, said that this piece with others had been in the possession of her family for many years and, when produced, sold for around about 10¹/₂p.

R.J. Henderson

AUSTRALIAN BOTANICAL LITATON OFFICE

THE EARLY TERTIARY MESOTHERM FLORA OF AUSTRALIA AND SOME
IMPLICATIONS FOR ANGIOSPERM EVOLUTION

Seminar presented at the Canberra Chapter, 25th July, 1978

H.A. Nix, CSIRO Division of Land Use Research

My basic interest lies in plant/environment interactions and in how such knowledge can be used in unravelling some of the mysteries of present and past plant distributions. If we are to use present-day plant adaptation as a guide to the past, we need quantitative description of plant responses. The example used here concerns thermal responses of broadly designated plant groups. Every plant can be shown to have an optimum temperature and upper and lower temperature limits for growth with somewhat wider limits defining lethal thresholds. Although we might expect a continuum of plant response to temperature, the presently available evidence suggests that a small number of broadly adapted groups can be recognised. For my purposes here, I will refer to three groups (1) the megatherms with thermal optimum around 28°C and lower temperature limit for growth at around 10°C; (the 'tropical' grasses with C4 metabolism tend to have a higher thermal optimum).

(2) the mesotherms with thermal optimum in the 18-20°C range and lower limit for growth at around 5°C (lethal temperatures for this group usually 0°C).

(3) the microtherms with thermal optimum in the 10-12°C range and lower limit for growth at 0°C.

Using normalised response functions for each of the three groups it is possible to couple these with a water-balance to give predictions of likely distributions. This has been done for Australian and New Guinea and the resultant patterns conform closely to known patterns of distribution for various floristic elements. By combining the patterns for the presently dominant megatherm and mesotherm groups it is possible to duplicate the phytogeographic provinces erected by Burbidge on floristic evidence. However, the overlap zone termed the 'Macleay-McPherson' overlap by Burbidge is shown to be of somewhat greater extent and a smaller but no less important overlap zone is indicated in the Cooktown-Ingham segment of N.E. Queensland. Even more important overlap zones occur in the mountains of New Guinea where mesotherms replace megatherms and microtherms replace mesotherms with increasing altitude.

At present, the Australian continent is shared almost equally by megatherm and mesotherm groups, with microtherms confined mainly to Tasmania and the south-eastern highlands. However, palaeobotanical evidence together with palaeoclimatic evidence suggests that mesotherm and microtherm groups were prominent for much of the past 60-70 million years. Much confusion has arisen because of loose terminology. Fossil floras with present day representatives in N.E. Queensland, New Caledonia or New Guinea are taken to indicate 'tropical' conditions. In almost all cases examined, however, the presumed equivalents are mesotherm or microtherm and occurring at higher elevations. Indeed, many of the floristic assemblages which include such apparently anomalous bedfellows as Nothofagus and Casuarina are analogous to those occurring at high altitudes in New Guinea today.

An excellent review and synthesis of the palaeobotanical data available for Australia during the Tertiary period has been provided by Elizabeth

Kemp (1978). While the record is less than complete for southern Australia, it is almost totally lacking for northern Australia. Until this deficiency is remedied, it will be difficult to resolve the status and origins of the pantropical element in the Australian megatherm flora. For the mesotherm and microtherm flora, the evidence is very strong for long-continued presence of the major elements and this predates the rifting and separation of Australia/Antarctica (at around 55 million years before present). Given the early Cretaceous (120 m.y. B.P.) evidence for angiosperm evolution (Hickey and Doyle, 1977) it is difficult to escape the conclusion that early radiation of the protoangiosperms took place on both lobes of the super continent Pangaea (Laurasia and Gondwana) and that further differentiation occurred in isolation as these lobes fragmented and drifted apart. Given the known latitudinal positions and equator-pole thermal gradients during the late Cretaceous-early Tertiary, Australia would have had environments suitable for each of the megatherm, mesotherm and microtherm groups. As mentioned earlier the evidence for long-continued presence is unequivocal for the mesotherm and microtherm groups, but remains to be proved for the megatherms. The possible presence of Nipa in some early Tertiary deposits may be an exception.

Against this broad background of thermally adapted groups, we must superimpose changes in water regime. Available evidence suggests that humid climates prevailed for much of the Tertiary, although seasonally-arid climates probably developed in northern Australia by mid-Tertiary. The progressive adaptation of the mesic flora and radiation into more xeric environments is a well-developed theme in Australia. I believe that the basic transition was from humid to seasonally humid arid conditions. Very little of the Australian flora is truly arid-adapted.

In summary then, I believe that our understanding of plant evolution and distribution hinges upon a thorough knowledge of ecophysiological responses. Of particular importance are autecological studies of important indicator groups such as Nothofagus and the austral gymnosperms.

Hickey, Leo J. and Doyle, James A. (1977). Early Cretaceous fossil evidence for angiosperm evolution. Bot. Review 43:1. 3-104.

Kemp, Elizabeth M. (1978). Tertiary climatic evolution and vegetation history in the southeast Indian Ocean region. Palaeo⁵. 24:169-208.

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HERBARIUM NEWS

NATIONAL HERBARIUM OF VICTORIA (MEL)

Two senior, equal-level, administrative appointments to the Royal Botanic Gardens and National Herbarium, Melbourne, have recently been made and confirmed. As Assistant Director, with responsibilities for the gardens and Cranbourne Gardens annexe, there is Mr S.D. (Stephen) Martin, who was previously with the National Parks Service of the Victorian Dept. of Conservation. As Assistant Government Botanist, with responsibilities

(Melbourne Herbarium News continued)

for the taxonomic, technical and curatorial work of the National Herbarium, there is Dr J.H. (Jim) Ross, promoted from his previous position as Senior Botanist at MEL. Both appointees are now occupying their respective places.

WESTERN AUSTRALIAN HERBARIUM (PERTH)

Since the entry in the "Know Your Herbarium" series (November 1974), the staff has changed somewhat and is now as follows:

Dr J.W. Green	<i>Curator</i>
Mr P.G. Wilson	<i>Botanist</i>
Mr T.E.H. Aplin	<i>Botanist</i>
Mr A.S. George	<i>Botanist</i>
Dr N.G. Marchant	<i>Botanist</i>
Mr B.R. Maslin	<i>Botanist</i>
Mr K.F. Kenneally	<i>Botanist</i>
Dr R.J. Hnatiuk	<i>Botanist</i>
Mrs G. Perry	<i>Botanist</i>
Mr N.S. Lander	<i>Botanist</i>
Mr R.J. Cranfield	<i>Laboratory Technician</i>
Mrs J.G. Goff	<i>Laboratory Technician</i>
Mrs J.W. Lee-Frampton	<i>Laboratory Technician</i>
Miss C.M. Lynch	<i>Laboratory Assistant</i>
Mr D. Butcher	<i>Laboratory Assistant</i>
Miss K. Barker	<i>Laboratory Assistant</i>
Miss V.L. Hamley	<i>Typist</i>
Mrs M. Wickham	<i>Assistant Librarian</i>

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CHAPTER NEWS

CANBERRA CHAPTER

Our seminar programme since April has been:

- April 26 : Frank Ingwersen, ecologist with Natural Resources Branch, Department of the Capital Territory.
"Development of Vegetation after Fire at Jervis Bay: and its implications for management."
- May 23 : Andy Gillison, CSIRO, Division of Land Use Research Woodland Ecology Unit.
"Vegetation Taxonomy."

In "Vegetation Taxonomy", Andy outlined a scheme for classifying vegetation using dynamic (strategic) plant attributes rather than pure floristics: a scheme which could be applied regardless of species composition.

June 27 : Dr Nigel Wace, Department of Biogeography and Geomorphology, Research School of Pacific Studies, Australian National University.

"Subantarctic Vegetation: Floras of South Georgia and Tierra del Fuego."

July 25 : Henry Nix, CSIRO Division of Land Use Research Woodland Ecology Unit.

"The Australian Tertiary Mesotherm Flora and its Implications for Angiosperm Invasion."

A report of this talk is published elsewhere in the newsletter.

August 29 : Professor Lindsay Pryor, Visiting Fellow at the Department of Forestry, Australian National University.

"Trends in Current Eucalypt Taxonomy."

Professor Pryor drew attention to the need for intensive studies of discrete species groups in Eucalyptus, using some very good recent studies as examples. However, he emphasised his concern at the tendency to "reduce" well-known species to lower rank, thereby cluttering the literature with unwieldy nomenclature.

September 19: Dr John Busby of the Australian Biological Resources Survey.

"The influence of microclimate on the physiognomy, growth and habitat of some Canadian moss communities."

October 31 : A combined meeting with the Ecological Society, chaired by Dr Andy Gillison. The topic was:

"Endangered Plant Species in the Australian Context".

The speakers were:

Mr William Hartley, formerly of CSIRO Division of Plant Industry.

Mr Roger Good, CSIRO Division of Plant Industry

Dr Bob Parsons, Botany Department, Latrobe University.

William Hartley outlined the problem on an Australia-wide basis, while Roger Good spoke about the monitoring of endangered species in New South Wales. Bob Parsons then spoke of eliciting the co-operation of field naturalists and other interested persons in monitoring such species, particularly in Victoria.

November 28 : Dr Tom Hartley, of Herbarium Australiense.

"Taxonomy of the genus Acradenia (Rutaceae)"

One excursion was held - November 26. Laurie Adams, of Herbarium Australiense, took us to Smoker's Flat, at 1320m., at the southern end of the Tidbinbillen Range. The day was enjoyable for all who attended.

TOWNSVILLE CHAPTER

The Townsville Chapter is an informal one which co-operates with CSIRO and James Cook University in arranging speakers. Recent speakers have included Don Blaxell on Eucalyptus; Bill Williams and Bob Bunt on Minimum Spanning Trees and its application to plant introduction; Sophie Ducker on early explorers and algae; and Betsy Jackes on an expedition to the Northern Territory via the Gulf.

Visitors are always welcome.

Betsy Jackes

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REQUESTS FOR MATERIAL

1. *Microseris* : Professor Dr K. Bachmann, Arbeitsgruppe Biologie für Mediziner an der Fakultät für Biologie der Universität Heidelberg, Im Neuenheimer Feld 504, 6990 Heidelberg 1, Germany, requests viable seeds (cypsela) of individual heads of different plants and different populations of *Microseris* spp. He also would appreciate herbarium duplicates of the relevant populations, if possible. Any help will be greatly appreciated.
2. *Zygophyllaceae* (especially *Tribulus*) : Hj. Eichler would be grateful for any herbarium collections of all Australian *Zygophyllaceae*. Professor M.N. El Hadidi from Cairo who is monographing the genus *Tribulus* s. lat. will visit Canberra next year in September for three to six months and work with him on the Australian species of the genus. Therefore, special attention to *Tribulus* (including what is presently called *Kallstroemia* in Australia) when collecting will be particularly appreciated (flowers and ripe fruits are needed).

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NANCY BURBIDGE MEMORIAL LECTURE

A donation of \$20 has been received from Dr Barbara Briggs.

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ANSWER TO PROBLEM IN NEWSLETTER NO. 16, page 13

Unfortunately an omitted word made the preliminary sentence misleading. It should have read "He was not a botanist ...". The speaker was Sir Robert Menzies.

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CURRENT MEMBERSHIP OF ASBS

AUSTRALIAN CAPITAL TERRITORY

Mr L.G. Adams	Herbarium Australiense, CSIRO, P.O. Box 1600, Canberra City, ACT, 2601
Ms B.J. Bowen	1 Hubbe Street, Torrens, ACT, 2607
Mr M.I.H. Brooker	CSIRO Division of Forest Research, P.O. Box 4008, Canberra, ACT, 2600
Miss E.M. Canning	Canberra Botanic Gardens, City Parks Admin- istration, Department of Capital Territory, Canberra City, ACT, 2601
Dr J.A. Carnahan	Department of Botany, A.N.U.
Professor D.J. Carr	Research School of Biological Sciences, Australian National University, P.O. Box 475, Canberra City, ACT, 2601
Mrs S.G.M. Carr	Research School of Biological Sciences Australian National University
Mr A.D. Chapman	Herbarium Australiense
Mr G.C. Chippendale	CSIRO Division of Forest Research
Mr A.B. Court	Canberra Botanic Gardens
Mr L.A. Craven	Herbarium Australiense
Dr M.D. Crisp	Canberra Botanic Gardens
Mrs E. D'Arnay	Herbarium Australiense
Dr HJ. Eichler	Herbarium Australiense
Mrs M. Free	50 Mirning Crescent, Aranda, ACT, 2614
Mr A.N. Gillison	13 Florina Place, Hawker, ACT, 2614
Mrs J.E. Gotham	P.O. Box 29, Kingston, ACT, 2604
Mr M. Gray	16 Wongoola Close, O'Connor, ACT, 2601
Dr T.G. Hartley	Herbarium Australiense
Dr R.D. Hoogland	Research School of Biological Sciences, Australian National University
Mr F. Ingwersen	12 Boniwell Street, Higgins, ACT, 2615
Dr A. Kanis	Herbarium Australiense

Mr M. Lazarides	14 Yapunyah Street, O'Connor, ACT, 2601
Dr A. McCusker	Australian Biological Survey, Div. Land Use Research, CSIRO, P.O. Box 1666, Canberra City, ACT, 2601
Mr T. McFarlane	Research School of Biological Sciences, ANU
Mr C.R. Marsden	Box 1184, Canberra City, ACT, 2601
Mr P.N. Martensz	Flat 5, Strathgordon Court, Cnr. Melrose Drive & Hindmarsh Drive, Lyons, ACT, 2606
Mr W.A. Martin	P.O. Box 29, Kingston, ACT, 2604
Mrs E. Mullins	33 Sprent Street, Narrabundah, ACT, 2604
Mr C.J. Nazer	69 Burkitt Street, Page, ACT, 2614
Prof. L.D. Pryor	Visiting Fellow, Forestry, Australian National University, P.O. Box 4, Canberra ACT, 2600
Mr R. Pullen	21 Nicholson Crescent, Turner, ACT, 2601
Mrs J. Pulley	12 Clisby Close, Cook, ACT, 2614
Dr R. Schodde	CSIRO, Division of Wildlife Research, P.O. Box 84, Lyneham, ACT, 2602
Mr H. Streimann	Canberra Botanic Gardens
Mr I.R. Telford	116 Captain Cook Crescent, Narrabundah, 2604
Mr D. Verdon	3 Bidwell Close, Yarralumla, ACT, 2601
Dr N.M. Wace	Dept. of Biogeography & Geomorphology, Australian National University, P.O. Box 4 Canberra, ACT, 2600
Mrs J. Ward	41 Angophora Street, Rivett, ACT, 2611
Mrs E.M. Watson	Botany Department, School of General Studies
Mr L. Watson	Research School of Biological Sciences, ANU
Mr J.W. Wrigley	Canberra Botanic Gardens

NEW SOUTH WALES

Mr J.A. Armstrong	Royal Botanic Gardens, Sydney, NSW, 2000
Prof. N.C.W. Beadle	Department of Botany, University of New England, Armidale, NSW 2351

Mr C. Betteridge	Conservation & Heritage Branch, P.E.C., Remington Centre, 169-183A Liverpool St, Sydney, NSW, 2000
Mr D.F. Blaxell	Royal Botanic Gardens
Dr R.A. Boyd	Botany Department, University of New England
Dr B.G. Briggs	Royal Botanic Gardens
Prof. R.C. Carolin	School of Biological Sciences, University of Sydney, NSW, 2006
Mr R.G. Coveny	Royal Botanic Gardens
Mrs J.C. De Nardi	42 William Street, Paddington, NSW, 2021
Mrs J. Emmerick	School of Botany, University of N.S.W., P.O. Box 1, Kensington, NSW, 2033
Mr A.G. Floyd	P.O. Box 432, Coffs Harbour, NSW, 2450
Miss N.C. Ford	14 Wakeford Road, Strathfield, NSW, 2135
Mr D.B. Foreman	Department of Botany, Uni. of New England
Mrs M.D. Fox	School of Biological Sciences, Macquarie University, North Ryde, NSW, 2113
Miss K. Green	Royal Botanic Gardens
Mr G. Guymer	Botany Department, Uni. of New England
Mr L.A.R. Haegi	Royal Botanic Gardens
Prof. M.M. Hindmarsh	Botany School, University of NSW
Dr A. Hobbes	31 Bell Street, Gordon, NSW, 2072
Dr S.W.L. Jacobs	Royal Botanic Gardens
Dr L.A.S. Johnson	Royal Botanic Gardens
Mrs V. Jones	Royal Botanic Gardens
Miss E. Kowal	Agricultural Research Station, Trangie, NSW, 2823
Mrs A.T. Lee	Royal Botanic Gardens
Mr D.J. McGillivray	Royal Botanic Gardens
Mr P. Matthew	Wisemans Ferry, NSW, 2255
Dr P.W. Michael	Department of Agronomy, Faculty of Agri- culture, University of Sydney, NSW, 2006
Dr J.M. Powell	Royal Botanic Gardens

Dr N. Prakash	Department of Botany, Uni. of New England
Mr C. Puttock	School of Biological Sciences, Macquarie University, North Ryde, NSW, 2113
Dr C.J. Quinn	Botany School, University of NSW.
Dr H.P. Ramsay	Faculty of Biological Sciences, Uni. NSW
Mr A.N. Rodd	Royal Botanic Gardens
Ms P. Selkirk	School of Biological Sciences, Macquarie University, North Ryde, NSW, 2113
Mrs V. Shanker	16A Cambridge Street, Willoughby, NSW, 2068
Mrs T.Y. Stead	14 Pacific Street, Watsons Bay, NSW, 2030
Dr D.P. Thomas	Department of Geology, Uni. of New England
Mrs J. Thompson	Royal Botanic Gardens
Mrs S. Threlfall	29 Surrey Street, Minto, NSW, 2566
Dr M.D. Tindale	Royal Botanic Gardens
Mr J. Walker	Biological & Chemical Research Institute, Private Mail Bag 10, Rydalmere, NSW, 2116
Mr J.T. Waterhouse	Botany School, University of NSW
Mr J.B. Williams	Botany Department, Uni. of New England
Mrs K.L. Wilson	Royal Botanic Gardens
Mr P.G. Wilson	12 Arthur Street, Dee Why, NSW, 2099

NORTHERN TERRITORY

Mr C.R. Dunlop	Scientific Services Station, Department of N.A., Darwin, N.T. 5794
Mr T.S. Henshall	Arid Zone Research Institute, P.O. Box 291 Alice Springs, N.T., 5750
Mr P.K. Latz	31 Burke Street, Alice Springs, N.T., 5750
Mr J. Maconochie	Arid Zone Research Institute
Mr A. Mitchell	Arid Zone Research Institute

QUEENSLAND

Mr G. Adcock	The Capricornia Institute of Advanced Education, M.S. 76, Rockhampton, Qld, 4700
Mr D. Airen	The Capricornia Inst. of Advanced Education
Miss B.F. Ashley	44 Fernberg Road, Milton, Qld, 4064
Dr V.H. Boughton	Botany Department, University of Qld, St Lucia, Qld. 4067
Mr D. Boyland	Queensland Herbarium, Meiers Road, Indooroopilly, Qld, 4068
Mrs Y.M. Brouwer	Botany Department, University of Queensland
Dr J.S. Bunt	Australian Institute of Marine Science, P.O. Box 1104, Townsville, Qld, 4810
Mr N. Byrnes	14 Bowline Street, Jamboree Hts, Qld, 4074
Mr B. Chantler	Capricornia I.A.E.
Mr J.R. Clarkson	Queensland Herbarium
Dr H.T. Clifford	Botany Department, University of Queensland
Mr L. Cook	Capricornia I.A.E.
Mr S. Culic	Capricornia I.A.E.
Mr N.C. Duke	Aust. Institute of Marine Science
Mr J.A. Elsol	Queensland Herbarium
Mr A. Emery	Capricornia I.A.E.
Dr S.L. Everist	13 Sunset Avenue, Bribie Island, Qld, 4507
Miss K. Hannon	Capricornia I.A.E.
Mr R.J.F. Henderson	Queensland Herbarium
Mr B.P.M. Hyland	4th Avenue, Atherton, Qld, 4883
Mr A.K. Irvine	CSIRO Division of Forest Research, Region Station, Maunds Road, Atherton, Qld, 4883
Dr B.R. Jackes	8 Hibiscus Street, Cranbrook, 4814
Mr L.W. Jessup	66 Jilba Street, Indooroopilly, Qld, 4068
Dr R.W. Johnson	Queensland Herbarium
Miss I. King	Capricornia I.A.E.

Mr J. Kirkpatrick	Capricornia I.A.E.
Dr P.S. Lavarack	National Parks & Wildlife Service c/- Animal Research Institute, Fairfield Rd, Yeerongpilly, Qld, 4105
Mr T.J. McDonald	Queensland Herbarium
Mr W.J.F. McDonald	Queensland Herbarium
Mrs M. Mann	Capricornia I.A.E.
Mrs L. Merrill	Capricornia I.A.E.
Mr V.K. Moriarty	Pinnacle Road, Julatten, Qld, 4880
Mr M. Morton	Capricornia I.A.E.
Miss S. Morton	Capricornia I.A.E.
Mrs B. O'Brien	Capricornia I.A.E.
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